Be immortalized

THE 20TH ANNUAL ASTECH AWARDS GALA

ASTECH
AWARDS

Alberta Science and Technology Leadership Foundation
126 Alastair Ross Technology Centre
3553 - 31 Street NW
Calgary, Alberta T2L 2K7

Phone: 403.220.9130

Fax: 403.220.9128

Email: info@astech.ab.a

www.astech.ab.ca

Table of Contents

2 Program

2 Dinner Menu

3 Master of Ceremonies

3 Featured Entertainment

4 ASTECH /Alberta ScienceFair Foundation Featured Student

5 Message from the Foundation

7 2009 ASTECH Awards Finalists and Recipients

50 Distinguished Patrons

57 Adjudication Panel

58 Nominators

58 Awards Gala Committee

59 ASTECH Foundation Board of Directors

60 ASTECH Awards Recipients 1990 – 2008

Program

VIP & Main Reception *[SPONSORED BY BENNETT JONES]*

Master of Ceremonies *[GAVIN CRAWFORD]*

Opening Ceremonies

Greeting from the ASTech Foundation *[MARTIN KRATZ, CHAIR]*

ASTech/Alberta Science Fair Foundation Featured Student
[SPONSORED BY ALBERTA INGENUITY]

Dinner and Presentation of Awards

ASTech After Party *[HOSTED BY CYBERA]*

Dinner Menu

Candied Lamb & Toasted Pine Nut Couscous
fresh mint and semi dried grape tomatoes
citrus vinaigrette

Le Petit Pois and Champagne Cream
spot prawn and tomato brunoise

Oven Roasted Organic Pheasant Breast
braised pulled beef short rib mushroom cap
sweet potato dauphinoise
buttered white asparagus and seared peppers
lavender poultry broth

Double chocolate cake

Dinner Wines

White
Peller Estates Pinot Gris

Red
Peller Estates Shriaz

Master of Ceremonies

Gavin Crawford

Gavin Crawford (born April 2, 1971) is a Canadian comedian and actor, best known for *The Gavin Crawford Show* and *This Hour Has 22 Minutes*. Crawford is a graduate of the BFA Acting Program at the University of British Columbia. He was the recipient of the Tim Sims Encouragement Fund Award in 1998. Born in Lethbridge, Alberta, Crawford is the creator, co-writer and co-star of the self-titled series, which ran for two seasons on Canada's Comedy Network. In 2003 he joined the cast of *This Hour Has 22 Minutes* filling in for Mary Walsh during her time away from the show and in 2004, Crawford was made a full-time cast member of *This Hour Has 22 Minutes*. He was nominated four times for the Gemini Award, which he won in December 2004 for his work on *The Gavin Crawford Show* (he was nominated twice in 2004, also for *This Hour Has 22 Minutes*).

On April 10, 2008 Crawford was recognized by Lethbridge Collegiate Institute with the Distinguished Achievement award. He also hosted the 2008 Canadian Screenwriting Awards. Crawford most recently hosted the Canadian version of *How Do You Solve a Problem Like Maria?* which aired on CBC Television in the summer of 2008.

Featured Entertainment

JOHN HYDE TRIO

John Hyde has been a freelance bassist since 1972. Formerly artistic director of the Jazz Studies Program at Mount Royal College, and past president of the Calgary Musicians' Association. He has numerous recording, arranging and producing credits with Amos Garrett, Sheri-D Wilson, The Tanya Kalmanovitch Trio, Senator Tommy Banks, Karl Roth, Tim Tamashiro, Jann Arden and many others.

John has performed with many great artists including Lee Konitz, Bob Mintzer, Don W. Thompson, Marion McPartland, Bill Watrous, Hugh Fraser, Eddie "lockjaw" Davis, Oliver Jones, Phil Nimmons, Rob McConnell, P.J. Perry, Alberta Theatre Projects, Theatre Calgary, Land's End Chamber Ensemble, Decidedly Jazz Dance, New Works Calgary, The Royal Winnipeg Ballet, and the Calgary Philharmonic Orchestra.

John has experience as a record producer and mixing engineer.

Gary Kurek

Youth buds into scientist and entrepreneur.

SHOWCASE
Up and Coming Alberta Youth

GARY KUREK

Gary Kurek is going into grade 12, but he has already garnered more accolades than most adults get in a lifetime. For example, this May alone at the 2009 Canada Wide Science Fair in Winnipeg, Mr. Kurek won six awards relating to his mobility devices, including Best in Fair. The Bonnyville Centralized High School student took home $46,800 in cash and scholarships.

His next step is to get through grade 12 with the academic achievement he expects from himself while he participates in drama club productions and the school volleyball team. He also intends to make the cut for the national science team to compete internationally in 2010. And he's commercializing two of his mobility device designs. One he can't talk about because it is in the licensing process. The other is called the Rollator hybrid wheelchair that he has been perfecting for much of his teen-aged life.

Mr. Kurek has found his scientific niche where he can combine his love of all things medical with his flair for engineering. He found his calling when his increasingly immobile grandmother couldn't find a walker that could do everything she needed it too.

"I observed how she moved around and what she needed," he remembers. "I thought of ways I could improve the device to suit her needs." The enterprising young man spoke to several people in the nearby community of Bonnyville and discovered that almost everyone had a relative or friend who experienced the limitations of wheelchairs and walkers.

Always alert to possibilities, Mr. Kurek set out to design the Rollator wheelchair hybrid. It's based on a rolling walker to which he attached a kit that allows the walker to be used manually or with an electric motor.

"By combining the functions of a walker and a wheelchair into one mobile assistive device, I was able to offer more functionality than what is currently out there," he explains. "I made it more versatile and smaller. And it's less expensive than what's out there." Mr. Kurek continues to perfect the Rollator, adding safety and usability features.

In 2008 Mr. Kurek took the Rollator to the Alberta regional science fair and brought home the silver medal in the Intermediate Engineering category, the Peer Innovation Award; and his was recognized as the project best applicable to a patent.

"Commercialization is definitely the goal," he says. To achieve that goal, Mr. Kurek intends to take mechanical engineering and business at university.

Message from the Foundation

Outstanding achievement deserves celebration! The activities and successes of Alberta's leaders in science, technology and related business build Alberta's economy, help us to attract and develop high value scientists, engineers and technology workers and improve the quality of life for all Albertans.

Celebrating success inspires the creation of new ideas and stimulates others to excel and achieve even greater outcomes.

Celebrating excellence stimulates enhanced discovery and research, leading to a stronger, diversified economy. For 20 years ASTECH, along with you, has been celebrating science and technology innovation.

Your presence here demonstrates you share our understanding of the importance of science and technology for each and every Albertan and for our province.

We are truly grateful you have joined us tonight. We plan to entertain you and showcase outstanding science and technology achievements.

This evening, 22 amazing people are being honoured. They each deserve recognition and are a sampling of some of the outstanding work being done in science and technology in Alberta today!

These individuals and companies illustrate the breadth and depth of Alberta's science and technology capabilities and achievements.

Over the past 20 years ASTECH has recognized 215 individuals, teams and organizations with an ASTECH award. Each are leaders and have helped to make Alberta a better place to live.

Many of you are in the room tonight – your contributions are appreciated and vitally important to our quality of life and to our economic future. Names of past recipients of ASTECH honours will be displayed on the walls throughout the evening.

We also know there are future awardees in this room.

Together we inspire future generations in the quest for accelerating innovation.

Message from the Foundation…continued

Twenty years ago a group of visionaries recognized the need to showcase, celebrate and reward Alberta achievement in the fields of science and technology and related business across a broad spectrum of sectors.

The vision of these founders is pursued today with the support of our patrons. These are organizations and individuals that know Alberta is making tremendous contributions to the global science and technology landscape.

Visionary private companies, leading research and educational institutions, and committed leaders from our federal and provincial governments contribute significant time, talent and financial resources to recognize Alberta's science and technology heroes.

I ask you to join me in thanking these ASTECH patrons and sponsors for their insight and support. You'll see their names and logos profiled during the ASTECH Gala, and throughout this program. Take the time to talk to them to catch their enthusiasm for celebrating our success beyond tonight. Thank them for helping us to celebrate our heroes.

Finally, I would like to thank each of you for joining us in celebrating the tremendous achievements of this year's ASTECH Awards finalists. Celebrate and share the excitement. Together we inspire future generations in the quest for accelerating innovation.

Sincerely,

MARTIN KRATZ
ASTECH Foundation Chair

2009 ASTech Awards

FINALISTS AND RECIPIENTS

Mrs. Shelagh Pyper
Outreach Coordinator

Discover E Engineering and Science Camps

Faculty of Engineering, University of Alberta

Excellence in Science and Technology Public Awareness

CAMPS INTRODUCE YOUTH TO SCIENCE AND TECHNOLOGY

Discover E Engineering and Science Camps have been turning Alberta youth onto science and engineering since 1993. The camps were established because of educators' concerns about the small numbers of students entering the engineering field.

"One of the major impacts of the program has been increasing scientific literacy in general," says Mrs. Shelagh Pyper, outreach coordinator. "We are also increasing the number of passionate boys and girls who are turned onto science to make it a really diverse field in future."

New programs place science in context of current events and the campers' lives, allow them to use critical thinking and be more confident of themselves. Mrs. Pyper says the camps help kids make better decisions, be better consumers and influence politics in a good way.

Discover E's focus is reaching girls, aboriginal youth, youth in remote communities, and disadvantaged youth. In 2009 Discover E launched the Girls Engineering and Mentorship (GEM) club. Under the mentorship of female undergraduate engineering student volunteers, 50 participants from grades three to eight built indestructible buildings, wired electrical circuits, launched straw rockets and explored facilities on the University of Alberta campus.

"We reached a milestone last year," Mrs. Pyper says. "We always wanted to increase girls' enrollment in camps to 40 per cent of participants. Last year we reached 35 per cent."

Discover E has been successful in developing partnerships and providing outreach programs to remote aboriginal communities. The organization also set up a bursary for urban aboriginal youth and in 2009, partnered with the Canadian Native Friendship Centre to engage the youth. About 50 kids from grades one to six attended two camps in the summer that focused on science, engineering and technology, incorporating traditional teachings, mentor events and sessions with aboriginal elders.

"I'm really proud of the partnerships we've created with aboriginal groups," Mrs. Pyper says. "It's an important relationship that will help these kids get into the technology fields."

Discover E Engineering and Science Camps Team (l to r):

Rachelle Neame

Shelagh Pyper

Angela Effa

Josh Ikebuchi

Amy Smith

Melissa Baron

Nick Klose

Youth in remote regions also benefit from Discover E's programs, which travel as far north as Tuktoyaktuk twice a year to deliver workshops and camps. With the addition of video conferencing workshops in 2008 the programs now reach even more remote communities.

"This year 50 communities in northern Alberta and the Northwest Territories participated in Discover E," Mrs. Pyper enthuses. "It's really exciting that technology is empowering us to reach even more communities."

Discover E has addressed some of the barriers for disadvantaged inner city youth by developing a partnership with the City Centre Education Project in Edmonton. It allowed Discover E to bring summer programming into the community for kids in grades one to four.

Mrs. Pyper is optimistic that with continuing enthusiastic Faculty of Engineering and community support, Discover E camps will continue to reach more children and engage them in science and technology.

"One of the major impacts of the program has been increasing scientific literacy in general."

SMART Technologies
Co-Founders,
Nancy Knowlton, CEO

David Martin, Executive Chairman

Outstanding Achievement in Information and Communications Technology Innovation

Sponsored by AVAC Ltd. and iCORE

INNOVATIVE COMPANY IS MAJOR CONTRIBUTOR TO LOCAL AND GLOBAL ECONOMY

Beginning with the belief that education is a life-long endeavour and one educator can make a difference in a student's life, SMART Technologies has been supporting educators by providing innovative products and services since 1991.

SMART is a Calgary-based company, an industry pioneer, and a market leader in developing collaborative products for classrooms and meeting rooms.

"Educators were the first to take an interest in SMART's interactive whiteboards," says David Martin, co-founder and executive chairman and an active member of the university research community. "They immediately saw the potential of SMART's whiteboard as instructional, professional development, and student collaboration tools. Since then, that small group of educators has grown into an international community spanning over 175 countries."

SMART invented the first interactive whiteboard to provide touch control of computer applications and annotation over standard Microsoft Windows applications. The SMART Board™ interactive whiteboard, connected to an LCD panel and a computer, introduced the world to interactive technology in classrooms, group meetings, and presentations.

Millions of teachers and students use SMART products daily to help make classroom lessons more engaging and effective. To do this, SMART employs over 750 people in Alberta and has more than 1,300 employees worldwide.

"We are a significant employer and contributor to the local and global economy," Mr. Martin says.

SMART continues to invest in research and development to find new tools to enhance the functionality of the SMART Board and other interactive hardware and software products it creates. In 2004 the company introduced the SMART Board for Flat-Panel Displays, which played an integral role in the Mars mission. The product was incorporated with NASA's plasma display system to create a network of Mars Exploration Rover (MER) Boards that help mission scientists and engineers with planning and analyses.

SMART Technologies (l to r):

David Martin

Nancy Knowlton

In 2008 the company introduced another first: the SMART Table interactive learning centre, designed for preschool to sixth grade students. The SMART Table allows students to select or move objects, draw, or write on the screen simultaneously, and work together to find answers to preset questions.

"Every day, organizations around the world are adopting new ways of working and learning together," Ms. Knowlton explains. "Successful collaboration and learning requires clear communication of ideas, goals, and strategies, whether to others in the same room or across distances. Tools like those SMART makes that enable this kind of communication ultimately expand the potential of what students, business people, and others can achieve."

Ms. Knowlton is also the executive director of the SMARTer Kids Foundation of which SMART is a founding and funding partner. The private organization gives opportunities for students and teachers to learn new skills and grow in self-confidence by placing technology, grants, and programs at their service.

"When people first see our products, they're delighted and intrigued by the "magic" that happens before their eyes," Ms. Knowlton says. "The real value, though, is in being our customer and enjoying the benefits of our products every day."

"Every day, organizations around the world are adopting new ways of working and learning together."

Dr. Michael E. Stiles
President, CEO CanBiocin Inc., Professor Emeritus, Department of Agricultural, Food and Nutritional Science, University of Alberta

Dr. Lynn M. McMullen
Professor, Agricultural, Food and Nutritional Science, University of Alberta, Chief Scientific Officer, CanBiocin Inc.

Innovation in Agricultural Sciences

Sponsored by Dow AgroSciences and AVAC Ltd.

RESEARCH YIELDS BREAKTHROUGH DISCOVERY FOR FOOD SAFETY

Every year an estimated 11 to 13 million Canadians suffer from foodborne illnesses, like the Listeria outbreak of 2008 in Canada that led to 22 deaths. The landmark discovery of Drs. Lynn McMullen and Michael Stiles reduces the risk of foodborne illness.

"We can prevent Listeria from growing on ready-to-eat foods like hot dogs," states Dr. McMullen. It sounds simple enough, but their pioneering platform technology is the result of decades-long research.

The technology called Micocin®, uses "friendly" naturally occurring lactic acid bacteria for preserving food and preventing foodborne illness. A second invention is Procin®, a genetically modified bacteria proven to reduce the incidence of scours (livestock diarrhea) in piglets. This can be expanded to help prevent other animal diseases with the potential to develop targeted probiotics to improve human health.

To commercialize and market Micocin and Procin, in 1998 Drs. McMullen and Stiles created CanBiocin Inc., a spin-off company from the University of Alberta. Dr. Stiles, professor emeritus at the university, is CEO and leads the research team; Dr. McMullen, professor in the university's Agricultural, Food and Nutritional Science department, is the chief scientific officer of the company.

Micocin is being marketed to companies that process and market meat products in the United States, which regulated the product four years ago, and in Central and South America.

"It's tremendously satisfying to see our science lead to commercialization and application in the real world," says Dr. McMullen. "We have a number of companies waiting to use it once the Canadian government approval goes through later this year."

Their partner in the endeavour is Griffiths Laboratories. Ltd., a global supplier of food ingredients to the meat industry. Dr. McMullen credits the successful international marketing achievements to Griffith Labs. Commercialization represents significant economic potential for Alberta's agri-industry and attracts leading researchers in food safety and biotechnology to the province.

(l to r):
Lynn McMullen
Michael Stiles

Dr. McMullen's accomplishments are not limited to her research. She is also the co-founder of Agri-Food Discovery Place, overseeing the Meat Safety and Processing Research Unit. The unit has features that allow researchers to work safely with pathogens like Listeria, and mimic conditions in a commercial meat processing plant.

"It's a dream come true," Dr. McMullen says. "What I do in a test tube does not translate to the real world. This unit allows me to do my research in real life situations. It's changed the research I am able to do and offers endless possibilities."

Dr. McMullen and Dr. Stiles are highly respected educators. Dr. McMullen refers to Dr. Stiles as her mentor and says they share a love of teaching.

"It's gratifying to teach the next generation of scientists, industry leaders and educators" she says. "It's definitely a big part of what keeps us motivated."

"It's tremendously satisfying to see our science lead to commercialization and application in the real world."

COANDA Research & Development Corporation
Dr. Darwin Kiel, President

Innovation in Oil Sands Research

Sponsored by Syncrude Canada Ltd.

A DECADE OF INNOVATION IN OIL SANDS RESEARCH AND DEVELOPMENT

When an oil sands company needed to determine why a new commercial-scale technology failed after laboratory studies and pilot-scale tests had been successful, experts were flown in from around the world to find the problem. When their efforts were unsuccessful, Coanda Research & Development Corporation was brought in. Using a combination of physical models and computational fluid dynamics, Coanda solved the mystery and provided a conceptual breakthrough in this new technology area.

"I'm very proud that over the last 13 years our dedicated staff have developed Coanda Research & Development Corporation into one of the most advanced industrial fluid dynamics facilities in the world, proving that top-notch research and development can, and is, being performed in the private sector in Canada," says founder and president, Dr. Darwin Kiel.

Coanda has provided fluid dynamic engineering services to oil sands companies for more than 10 years, during which time the company has had significant impact on the oil sands industry by providing practical solutions to a variety of industrial challenges. The company specializes in process flow modelling and process design optimization using sophisticated methods such as physical, analytical, and computational modelling.

Three of the greatest challenges associated with the development and improvement of oil sands technology are the massive scale, the huge costs, and the need for uninterrupted production. The techniques employed by Coanda allow oil sands companies to cost-effectively improve existing processes and develop new designs in virtually every area of oil sands technology, providing significant economic and environmental benefits to the oil sands companies and Alberta as a whole.

"I get great satisfaction from the challenge of finding technical solutions to complex problems that are of importance to the success of our clients," Dr. Kiel says. "Solving the types of problems that we tackle requires a combination of engineering, science, and a certain 'out-of-the-box' creativity."

About 18 months ago, Coanda moved into a new 34,000 square-foot facility in Burnaby, British Columbia, which has quickly been filled with many new and challenging experimental studies. The most dramatic change that will occur over

Darwin Kiel

the next two- to five years at Coanda will be the increased capacity to operate simulations utilizing actual process materials at conditions that more closely resemble commercial conditions.

"These simulations are essentially a hybrid between traditional physical modelling and pilot plant facilities," Dr. Kiel explains. "The great advantage of this approach is the improved similitude without the high costs associated with pilot facilities." Even today Coanda utilizes actual oil sand ores, slurries, tailings materials, and hydrocarbons when simulating extraction and upgrading processes.

It is now commonplace for Alberta oil sands companies to employ modelling techniques for process improvements and optimization well before any steel is cut—a trend that Coanda has helped develop and which the company hopes will continue in the future.

"Solving the types of problems that we tackle requires a combination of engineering, science, and a certain 'out-of-the-box' creativity."

Embedia Technologies
Reid Blumell, President

Outstanding Achievement in Environmental Technology and Innovation

Sponsored by Shell Energy Canada

COMPANY THRIVES ON THE CHALLENGE OF CUSTOMIZING TECHNOLOGY

In an era of rapid technological advancement, even buildings are getting smarter. Calgary-based Embedia Technologies' shading technology makes smart buildings even smarter. The company was launched to address a specific demand for sophisticated, specialty shading systems.

Three University of Alberta engineering graduates started Embedia in 2002 at the invitation of world leader in shades, Nysan Shading Systems. The new company's first assignment was to design the shading system for the landmark Bovis Lend Lease Headquarters in Sydney, Australia. The building was to provide a comfortable working environment without the need of traditional air conditioning. It was the first building in Australia to receive a 5 Star energy rating from the Australian Building Greenhouse Ratings.

"Sydney was a big and challenging project," says Reid Blumell, president of Embedia. "They had a big investment in the technology and it was gratifying to have a little part of making the building as efficient as possible."

Embedia developed the Dynamic Facade Controller using sensors that consider what's happening in the outside world, like the temperature, time of day, and time of year. This informs the system where to position the shades to keep the heat in or out, modify light to the interior, or make whatever adjustments are needed. In Sydney the system was specifically designed to eliminate solar heat gain generated by the sun's rays within the building. At the same time, it maximized the amount of natural light reaching the building's interior.

The Dynamic Facade Controller gives Embedia control of the shades from its Calgary office. "That's a huge advantage," Mr. Blumell says. "We're a small company doing work all over the world, so the remote access is reducing our environmental footprint." Embedia has a prestigious list of buildings with unique shading requirements in its portfolio.

"We don't offer cookie cutter solutions," Mr. Blumell explains. "We customize the system because no two projects are the same. We try to integrate well with all other smart systems in the building to be part of an overall smart solution. We want our technology to be able to talk with other systems."

(l to r):
Reid Blumell
Mark Crapo

Mr. Blumell says the Chicago Art Institute was particularly challenging. It required a system that allowed precise amounts of light into different parts of the building—less in exhibit spaces and more in the offices.

"It had so many different requirements, from aesthetic to functional," Mr. Blumell explains. "The shades were coordinated to close when audiovisual systems were operating in meeting rooms and boardrooms, and to open for meetings."

Closer to home, Embedia designed a shading system that allowed in as much natural light as possible without glare or heat for the new WestJet building at the Calgary Airport. And of course, the project challenged the team.

"We love working on challenging projects," Mr. Blumell says. That's why Embedia's plans include making more advances in solar control technology and furthering its position as leaders in the field.

It was the first building in Australia to receive a 5 Star energy rating from the Australian Building Greenhouse Ratings.

Dennis Prince
Founder, Airdar Inc.

SAIT Polytechnic Outstanding Achievement in Applied Technology and Innovation

COMPANY PROVIDES SURVEILLANCE OF FUGITIVE EMISSIONS

A new technology developed in Alberta has been promoted by the province's oil and gas sector because it will allow them to monitor, measure and capture emissions. That will help the environment and improve operational efficiency and profitability, while meeting society's goal to reduce greenhouse gas emissions.

Dennis Prince, the inventor of Airdar (Air Detection and Ranging) and founder of Airdar Inc., credits the opportunity to develop his breakthrough leak-detection technology to the support of the oil and gas sector and other organizations. Airdar detects and ranges emitting sources using compounds travelling in air.

"Over the four years I conducted field trials," Mr. Prince says, "many oil and gas companies and organizations helped me develop Airdar technology by funding me and giving me guidance in commercializing it. I would never have gotten off the ground without this support, particularly from Keyera Energy, which was there from the beginning."

The novel technology sets a new standard for leak detection, which has previously been labour-intensive, directional, and intermittent. "Airdar can spot an emitting source in the atmosphere, just like Radar spots planes coming in," Mr. Prince explains. He developed the technology while in between jobs working as an environmental engineer specializing in air quality issues.

"I thought there had to be a way to identify emissions sources," he recounts. "That led me to create Airdar. I realized it was a cousin to Sonar, Radar, and Lidar and that it could sweep an area, identify the sources, and quantify them."

The Airdar system is a sophisticated combination of permanently installed field sampling with an analyzer and timers. It creates site maps showing where leaks are occurring by using atmospheric conditions. The Airdar system is automatic and can monitor sites continuously to find unexpected emissions other systems cannot. That saves operators money as valuable resources are not lost.

"We are looking to help industry reduce methane emissions and authenticate the reductions," Mr. Prince says. "Methane is 21 times more potent a greenhouse gas than CO_2. Even just a modest reduction of methane emissions is important."

Dennis Prince

Mr. Prince maintains Airdar can also play a key role in helping companies save money by identifying and monitoring fugitive emissions while providing benefits for potential greenhouse gas credits with the reductions.

"Airdar has huge commercial potential because it has unique technical strengths and patent protection," Mr. Prince says. "The company has advanced cautiously over the last few years and is poised now to take dramatic steps forward. Taking it the next step will include looking for breakthroughs in the distances over which the system can operate and the size of emissions it can detect. With what we know now," he adds, "we have already exceeded the limits of what was considered possible."

"The company has advanced cautiously over the last few years and is poised now to take dramatic steps forward."

Dr. Robert A. Wolkow, FRSC
Principal Research Officer
and Molecular Scale Devices
Group Leader, National
Institute for Nanotechnology

Professor and iCORE Chair of
Nanoscale Information and
Communication Technologies,
Department of Physics,
University of Alberta

Outstanding Leadership in Alberta Science

WORLD LEADING SCIENCE CREATING REVOLUTIONARY OUTCOMES

"I'll know we've been successful when we see our ideas are transformed into products you can buy at Canadian Tire," says Dr. Robert Wolkow. The world-renowned nano-scientist is only half joking. He focuses his passion for studying the fundamentals of nature on issues most likely to create useful technologies. He strives for Nobel level excellence in his academic work and for major industrial impact from the practical ramifications of that work. Some say it is a fair bet he will do both.

Dr Wolkow has been advancing leading-edge nano-science for more than two decades. He was the first to capture an atom-by-atom view of a chemical reaction. A few years later, he determined the atomic structure of the silicon surface that coats all computer chips. Five years ago he and his group created a new concept for a transistor, the essential switch device underlying all electronics, made of a single molecule.

Dr. Wolkow's multidisciplinary team at the National Institute for Nanotechnology, housed at the University of Alberta, have continually advanced the microscopes and other tools that make leading nano-science possible – he calls these "new eyes and new hands". Recently, the team invented and patented the world's sharpest object – a tip that terminates in a single atom. Wolkow likes the description the Berliner Zeitung newspaper came up with: "Die spitzeste Nadel der Welt". News coverage was enormous, leading in turn to the largest web traffic that administrators had ever seen at the University.

The nano-tip turns out to be a wondrous entity – opening doors to new tests of the fundamentals of quantum mechanics, while at the same time enabling extraordinary new microscopes. In one direction, Wolkow works on science and technology with Hitachi High Technologies to create commercial applications – a $14 million project. Wolkow and his team expect to see their scientific advances soon lead to technology used by scientists in labs around the world.

When wearing his professor's hat, Dr. Wolkow shares his passion for studying nature with his students.

"To me, studying the fundamentals of interactions among atoms and molecules is little different than watching with awe as bees collect pollen," explains Wolkow, whose years of formative research have contributed more than any other scientist's

Robert Wolkow

to the international recognition Alberta now enjoys as a leading centre of nanotechnology research.

"Our transistor promises enormous power savings," says Dr. Wolkow. "It uses only one electron charge to achieve switching, rather than the 100,000 required by conventional computers. It could be the ultimate green technology for building electronics and computers."

His current challenge is exploring the potential of quantum dots, tiny "bottles" for controllably holding electrons. He and his team created single atom quantum dots, making possible a new level of control over individual electrons. This leading scientific development opens new possibilities for revolutionary computation schemes, including a quantum computer. Suddenly, the idea of functional computers "smaller than a speck of dust," as Dr. Wolkow puts it, is no longer science fiction. Through their scientific work on new computer concepts, the Wolkow team is also creating the real potential for new Alberta-based companies based upon revolutionary developments in nano-science.

"Creating new technologies creates a new economic base. And that's important in Alberta and in Canada. But it can only happen with the transformative power of science. I want to leave a legacy of having made this place richer and better!" says Dr. Wolkow.

"It could be the ultimate green technology for building electronics and computers."

Dr. Richard Stein
Professor Emeritus

Research Professor, Centre for Neuroscience, University of Alberta

Outstanding Leadership in Alberta Science…continued

RESEARCH HELPS DISABLED BE MOBILE

After the 9/11 bombing of the World Trade Center in New York, Dr. Richard Stein remembers reading a news report about a man who had run down 70 flights of steps using a C-Leg Dr. Stein and his colleague, engineer Kelly James, had invented.

"It's a pretty dramatic case about how someone's life depended on what we'd done," he says. Dr. Stein is research professor and professor emeritus in the Centre for Neuroscience he founded at the University of Alberta. His research and inventions over the past five decades have helped thousands of people with disabilities from spinal injuries, brain injuries, amputations, strokes and other catastrophic neurological events.

"The few successes we have make all the long hours in the lab and all the failures we have, worthwhile," he says. That's an understatement. Dr. Stein is considered to be one of the leaders of movement and rehabilitation neuroscience in Canada and internationally.

Dr. Stein studied physics before entering into the field of physiology. This background in both physical and biomedical sciences has led to his contributions that span science, medicine, mathematics, and engineering. His work has contributed to mathematical models that clarify how the nervous system works. And his engineering insights have produced practical devices, like the C-Leg, that are being sold around the world and improving the lives of people with a variety of disabilities. Dr. Stein also developed a new method for controlling electrical stimulation for people with foot drop, a debilitating condition that arises from stroke, multiple sclerosis, spinal cord injury, and brain injury.

He has had five patents issued to him and is the co-founder and president of Biomotion Ltd, a company mandated to transfer technology from the university to Alberta industry or business and develop it to produce clinically useful and profitable products. The products he invented received the DaVinci Award in 2006 and 2007. The international award recognizes the most innovative adaptive and assistive technologies that enable equal access and opportunity for all people, regardless of ability. In 2001 Dr Stein received the Canadian Medical Association's Medal of Honour, the highest award the association bestows on a person who is not a member of the medical profession. Dr. Stein is also recognized for his collaborative work with over 200 scientists from over 25 countries, including all of the young scientists he has mentored.

Richard Stein

"The thing with neuroscience, is that we've learned 90 per cent of what we know in the past 10 years," Dr. Stein explains. "This is just the beginning. Neuroscience is a rapidly burgeoning field with lots of exciting discoveries to be made in the next 30 to 40 years. I encourage students to explore and innovate in trying to understand the brain for the practical benefits to people with disabilities."

"This is just the beginning. Neuroscience is a rapidly burgeoning field with lots of exciting discoveries to be made in the next 30 to 40 years."

Dr. Daniel W. Smith
Professor Emeritus

Department of Civil and Environmental Engineering, University of Alberta

Outstanding Leadership in Alberta Science…continued

RESEARCH PROTECTS PUBLIC HEALTH BY IMPROVING WATER QUALITY

During the 40 years he has been an environmental engineer Dr. Daniel W. Smith has used all of his multi-disciplinary talents to protect public and environmental health through his work with the most fundamental of materials—water.

"Water is essential to all living things and to the development of societies," Dr. Smith says. "Public and environmental health engineering involves chemistry, math, physics, biology, law, and health issues, all of which I enjoy. It seemed like a place where someone could have a meaningful impact."

Throughout his distinguished career Dr. Smith has collaborated with medical scientists, microbiologists, immunologists, chemists, nanotechnologists, and ecologists to find solutions to complex environmental problems. All of the work is driven by his passion about water quality and public and environmental health protection.

His seminal work, Cold Regions Utilities Monograph, is a 900-page manual that addresses the design and construction of water and sewer systems in cold climates. Now in its third edition, it is an essential text used by water and wastewater professionals and governments dealing with cold environments. The result of this publication and Dr. Smith's continuing research into water systems has significantly improved public health protection through the delivery of safe drinking water and the removal of wastes in communities and industries in cold climates.

Dr. Smith's research on the use of ozone and advanced oxidation processes for treating drinking water and wastewater is renowned for the development of technology to remove disease-causing agents.

"I have visited virtually all of the First Nations communities and the major communities in Alberta to improve water and waste water systems," he says. "I use my visits, evaluations, and analyses to drive research into treatment processes for the future. I want to stay ahead of the guidelines and regulations in terms of public health and environmental protection."

"All of this is extremely important to the maintenance and improvement of life," says the eminent scientist and the first environmental engineer to be elected to The Royal Society of Canada. An emerging concern Dr. Smith is researching is the contamination of our water by pharmaceuticals, pesticides, and personal care

Daniel Smith

products. "How we deal with them will have a major impact on all living things," he says.

Dr. Smith says one of the most important aspects of his career is being an educator. A professor emeritus and cross-appointed to the School of Public Health at the University of Alberta, Dr. Smith is co-creator of the undergraduate degree program in environmental engineering. He has graduated more than 140 M.SC. and PhD students who hold positions in academia and industry across Canada and the world. He currently works as an adjunct professor at the University of Calgary.

"First and foremost I derive satisfaction from my students," Dr. Smith says. "They will carry on the principles I work and live by. That's my legacy."

"First and foremost I derive satisfaction from my students, they will carry on the principles I work and live by."

Dr. Ian Whishaw
Professor, Canadian Centre for Behavioural Neuroscience, Department of Neuroscience, University of Lethbridge

RESEARCH PUTS NEUROPSYCHOLOGY ON THE AGENDA

Dr. Ian Whishaw has made a career of shaking up the neuroscience world with his innovative concepts.

He defied conventional wisdom in the 1970s by proposing that the brain didn't function solely to produce mental states; that it had evolved with the purpose of producing our movements. His controversial research changed our understanding of how the brain works and the way scientists conduct research on the brain.

When he arrived at the University of Lethbridge in 1970 to begin his career he had 12 students, no laboratories or equipment, and neuroscience didn't exist.

"It wasn't only at Lethbridge. It was everywhere," he recounts. "You either worked in psychology or biology. People like me belonged in biology because we didn't do the kinds of things you do in psychology." Dr. Whishaw's research into the brain's influence on behaviour did a lot to dispel that myth and to put the field of neuropsychology on the scientific agenda.

Largely due to his vision, the University of Lethbridge's Canadian Centre for Behavioural Neuroscience is on the map as one of the most important places in the world to study neuroscience.

"We have our own department and building with over 100 people employed—all of them working on the brain," Dr. Whishaw says with obvious pride. He also takes satisfaction in the fact that all students enrolled in liberal arts at the university take a course on the brain, using the textbook coauthored by Dr. Whishaw and long-time colleague Dr. Bryan Kolb. The university bestowed its highest honour, the Ingrid Speaker Gold Medal for Research, on Dr. Whishaw for research, scholarship and teaching.

Dr. Whishaw is sometimes called "The Rat Whisperer". He wears the title with a nonchalance that belies its importance. Dr. Whishaw is one of the world's top neuroscientists and the number one authority on the intricate behavioural repertoire of the laboratory rat. His groundbreaking research using rats has been instrumental in examining how the details of bodily movements, such as hand movements, are influenced by injury or disease to the motor systems of rodents and humans.

"When I began working on rats, they were viewed as just another animal and very different from human beings," Dr. Whishaw says. "Over the years, I've been

Ian Whishaw

able to show that rats are wonderful models to study the human condition." He jokes "Rats are just little people without shoes and socks."

His research helps approximately 60,000 Canadians that suffer some form of brain damage each year. Dr. Whishaw continues to study human hand movements and their relation to Parkinson's Disease.

His research helps approximately 60,000 Canadians that suffer some form of brain damage each year.

Dr Linda M. Pilarski
Canada Research Chair in Biomedical Nanotechnology

Professor, University of Alberta and Cross Cancer Institute

Outstanding Leadership in Alberta Technology

RESEARCH RESULTS IN INNOVATIVE TECHNOLOGIES

Dr. Linda Pilarski has always been motivated by helping patients. In her current research the patients are helping her, too. She's using tissue donations from patients to understand their cancer, detect it, and find treatments for it.

"I couldn't do this kind of research without the help of patients," says the pre-eminent cancer researcher and professor at the University of Alberta's Cross Cancer Institute. "They are also passionate about my research. They know that research is essential for more effective therapies and holds potential for long-term control or cure. We get mutually excited about the possibilities."

Dr. Pilarski specializes in cancer of the human immune system and novel technology focused on better diagnosis and monitoring tools for the clinic. Together with her long-time clinical research partner, Dr Andrew Belch, Dr. Pilarski has been a pioneer in developing approaches to analyze the biological processes underlying human cancer using fresh malignant cells from patients.

Her research has resulted in two major technologies with commercial impact and has amassed a large and compelling body of scientific discovery and innovation, protected by several patent families.

Her innovative work in identifying new applications for hyaluronan—a very large sugar molecule that plays key roles in health and disease—as a therapeutic agent has produced a new treatment strategy that is already in commercial development. It will provide a powerful tool for helping individuals with, for example, cancer, HIV or autoimmune diseases. Her research in this area has also led to exciting new approaches to develop drugs for early intervention.

"With this new type of therapeutic approach, cells can be collected from a patient before treatment with an otherwise lethal dose of anti-cancer drugs," Dr. Pilarski explains, "then after the treatment the cells are given back to rebuild the blood."

In Dr. Pilarski's latest research project she leads a large multidisciplinary team, funded by the Alberta Heritage Foundation for Medical Research, that is developing microfluidic devices for automated molecular medicine, sometimes called "lab on a chip." These laptop-sized or handheld devices have the potential to perform sophisticated, inexpensive molecular profiling in any health care centre no matter how small or remote.

Linda Pilarski

"That research started with the idea that personalized medicine is the wave of future," Dr. Pilarksi says. "If we can identify the molecular makeup of an individual with cancer or another disease, we can give them the most effective treatment, based on the person and disease."

Even though Dr. Pilarski's work appears to be in two unrelated disciplines, therapeutics and nanotechnology, she is excited by the links she sees between them.

"Each enriches and needs the other," she says. "Using science and technology is an integrated and incremental process; we build on what we and others have done before, to bring research advances to the community."

"That research started with the idea that personalized medicine is the wave of future."

Dr. Fadhel Ghannouchi
Professor, Department of Electrical and Computer Engineering, University of Calgary

Outstanding Leadership in Alberta Technology… continued

RESEARCH HAS ECONOMIC AND ENVIRONMENTAL BENEFITS

Dr. Fadhel Ghannouchi is motivated by the research he does in the Intelligent RF Radio Technology Laboratory (iRadio Lab) at the University of Calgary and by the students and researchers with whom he trains and works.

Dr. Ghannouchi is a world-renowned research engineer and scientist and respected technical leader and innovator. He is an iCORE professor and senior Canada Research Chair in RF radio technology at the University of Calgary's Schulich School of Engineering. From Dr. Ghannouchi's perspective, his most important contribution to science is developing smart radios and reducing their energy consumption.

"This kind of state-of-the-art work keeps me motivated," he says. "I feel the need to contribute to reducing energy consumption in the communications industry. It's not only helpful economically. By reducing our greenhouse gas-emission footprint we contribute in cleaning up our environment and hence give our children a better future. That is important to society."

Dr. Ghannouchi established the iRadio Lab in 2005 with $5.5 million in funding from all levels of government and industry. Its mandate is to address problems from an individual device to a systems level and deliver specialized designs to industry, which develops the technology into distinct products for commercialization. The lab is developing radio technology that focuses on energy efficiency and optimizing the flexibility, mobility, and universality of the radio communication terminals. The niche lab is one of a kind in Canada and has few parallels in the world.

"We are working towards a very high-efficiency radio device that we hope will reduce by half the energy consumed on a network level," Dr. Ghannouchi explains. He is excited by his research into reducing energy consumption of an entire network, rather than that of only the base station. "We have broadened our research to address the design of the network from a hardware, software, and a systems-level approach so we can reconfigure an entire network, where significant energy savings can be made."

Dr. Ghannouchi's research is also looking at the universality and sustainability of the technology. He is developing a communication terminal that can be used anywhere safely, without sacrificing the performance. He wants to build a company to commercialize iRadio Lab's technology "to get a return from the

Fadhel Ghannouchi

investment that we and society have put into this venture."

Of all his significant accomplishments in radio frequency (RF) electronics, Dr. Ghannouchi views his training and mentorship of more than 60 graduate students as the most gratifying of his endeavours.

"My students have helped shape my career and influenced me to produce interesting work," says the professor in the department of Electrical and Computer Engineering. He has trained students from all parts of the world, who are now high-ranking professors at prestigious universities, senior researchers, and executives at high-tech companies.

"By reducing our greenhouse-gas-emission footprint we contribute in cleaning up our environment and hence give our children a better future."

Dr. David Wishart
Professor, Biological Science and Computing Science, University of Alberta

Outstanding Leadership in Alberta Technology… continued

RESEARCH OPENS UP NEW TREASURE CHEST

Dr. David Wishart likens his breakthrough scientific discoveries to opening an old treasure chest containing great wealth. The treasure chest is called metabolomics: the study of metabolites or small molecules that are the chemicals of life found in blood, urine, tissues or body fluids.

"We've reinvigorated and opened people's eyes to another part of what we've long neglected in the scientific world," he explains. "Science has been focusing on the sexy science in genes and protein chemistry. What we're doing is almost retrospective from the perspective of working with small molecules in blood and urine. People thought that was done for in the 1950s."

Because of Dr. Wishart's groundbreaking research, metabolomics is now recognized as the third treasure chest of the "omics" field, along side genomics and proteomics. And also because of Dr. Wishart, Alberta is now a world leader in this field. In 2001 he started Chenomx Inc. an Edmonton-based company, which is among the first commercial metabolomics enterprises in the world; and in 2008 he launched the Pan-Alberta Metabolomics Platform, a leading research facility dedicated to metabolomics that is spread over the University of Alberta and the University of Calgary.

Over the past decade Dr. Wishart's team has been working on techniques that allow for hundreds of metabolites to be identified and quantified by nuclear magnetic resonance (NMR) and mass spectrometry. Early on, he recognized that these techniques depended on having a library of known compounds, which was limited. So in 2005 he launched the Human Metabolome Project, a multi-institutional, multi-million-dollar effort, based in Alberta, which revealed the human metabolome for the first time. In the course of completing the human metabolome, Dr. Wishart's team helped pioneer innovative hardware, software, databases, chemical libraries, and methodologies that redefined what is being done with metabolomics.

Most impressively, the Human Metabolome Project created the world's largest collection of human metabolites, the most complete collection of metabolite spectral libraries and the most complete set of metabolite databases in the world.

"Twenty years ago, we were looking through a keyhole; today we're looking through a picture window," Dr. Wishart says. "The research and technology we've developed promises to make the delivery of diagnostic tests much, much cheaper.

David Wishart

And the quality of diagnostic tests will be much better. It's too early to tell, but this research could completely change the way medicine is practised."

Dr. Wishart's research was made possible by several government bodies working together, including Genome Canada, Alberta Advanced Education and Technology, the Alberta Heritage Foundation for Medical Research, and the National Research Council.

"It was an interesting partnership between the provincial and federal governments," Dr. Wishart says. "Together we opened new vistas in metabolic engineering."

"Twenty years ago, we were looking through a keyhole; today we're looking through a picture window."

Computer Modelling Group Ltd.
Ken Dedeluk, President, CEO

Outstanding Commercial Achievement in Alberta Science and Technology (>25M)

COMPANY HELPS OIL INDUSTRY SOLVE COMPLEX PROBLEMS

What began 32 years ago as a University of Calgary spin-off research company founded by a professor and funded with government money, has grown into one of the world's most successful reservoir simulation software companies.

Computer Modelling Group Ltd. (CMG) was first known for its expertise in heavy oil. It has since expanded into all aspects of reservoir flow modelling, focusing on the development and delivery of reservoir simulation technologies that assist oil and gas companies to determine reservoir capacities and maximize potential recovery.

"We are a very big value-add to oil companies that use our software," says Ken Dedeluk, president and CEO of CMG. "They can increase their asset value significantly by using our technology." An increase in asset recovery by 1- or 2 per cent can make a difference of millions of dollars to oil companies.

Mr. Dedeluk says companies involved in extracting heavy oil from bitumen don't jump into the very expensive process without using simulation first to test the productivity of the reservoir. "Even companies with zero production use our technology to prove up assets for the future," Mr. Dedeluk explains.

CMG went public 12 years ago and is traded on the TSX Stock Exchange under the symbol CMG. With a customer base of over 360 oil and gas companies, consulting firms and research institutions in more than 45 countries, CMG is one of the largest independent providers of reservoir simulation software in the world.

CMG's unique approach to the development of numerical simulation technology, coupled with past and current client input, has advanced CMG's technologies to the point where the company can solve the extremely complex problems and issues encountered in today's petroleum industry.

Mr. Dedeluk attributes CMG's success to its continued focus on research and development.

"Our R&D spending increased by a compound rate of 24 per cent over the last six years," he explains. "We reinvest 20 per cent of our revenue into research, and we

Ken Dedeluk

hire people from every corner of the world to develop and enhance our products." Of 124 staff, 60 have an M.Sc. or a PhD.

CMG seems to have hit on a winning strategy. The company's lowest revenue growth year in the last seven years has been 18 per cent.

"Our biggest accomplishment has been continuous growth," Mr. Dedeluk says. "It's also our biggest challenge. We are just keeping up with the demand for our product in what has been nine consecutive record years." Most of CMG's clients are return customers. And that's where CMG will continue to focus its resources.

"We are keeping up with customer demands for new features," Mr. Dedeluk says. "We are enhancing our products by doing the research and development on what our customers tell us they need."

"Our biggest accomplishment has been continuous growth. It's also our biggest challenge."

Yardstick Software Inc.
Mr. Chris LaBossiere,
Co-Founder, VP Business
Development

Outstanding Commercial Achievement in Alberta Science and Technology (<25M)

COMPANY REVOLUTIONIZES ONLINE TRAINING AND TESTING

At Yardstick Software Inc. every client is considered a partner, from running the program to delivery of product to revenue sharing. Yardstick Software is a privately owned, customer-focused company that provides online testing and training primarily to licensing bodies. In its business model, the company gets a percentage of the licenses the licenser sells, unlike other companies that sell software packages to licensers and then continue to charge for additional requirements.

"We have 225 clients," says Chris LaBossiere, co-founder and VP Business Development of Yardstick Software, the only company in Canada that specializes in licensing exam delivery. "Everyone has the same objective and everyone celebrates in our growth."

Yardstick Software provides online testing and training to over 400,000 individual users across dozens of industries. It has 13 full-time employees and in 2008, it reported $3 million in revenues. The company has designed several products to enhance functionality of its clients' websites.

The Yardstick Software web application is designed to revolutionize the way organizations use the internet to deliver training and testing to their users.

ProTraining.com and ProExams.com are full-service multi-faceted divisions within the company that offer instructional design, training object development, psychometric services, and exam centre access.

Yardstick Measure and Yardstick Inform are 100-per cent proprietary applications that are the backbone of the company. The fully hosted, internet-based application gives each customer the benefit of a world-class product and infrastructure.

Yardstick Software's system allows clients to customize the look and feel of their websites and a built-in e-commerce function gives them the tools they need to administer, track, process, and report their sales. The company continues to invest in developing new product lines, which accounts for 50 per cent of its costs.

"The new products allow us to accelerate our growth and offer diversification in our revenue streams," explains Mr. LaBossiere. "The most exciting thing about this

(l to r):

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Chris LaBossiere

company is that we have gone into areas we never expected to. Each product has evolved to allow us to provide services we didn't even envision five years ago." Yardstick Software is still in growth mode, continuously adding functionality to its system and looking to grow to become a $50- to $100-million company.

"It's all about reinvesting and scaling to become truly global," Mr. LaBossiere explains. He says the company's software and hosted server infrastructure can easily accommodate significant incremental global expansion.

Indeed, Yardstick Software is seeking new geographical markets and is enlisting resellers to sell its applications in Europe and Asia. It is also increasing its presence in the United States.

"In the next five- to 10 years, we will expand on the foundation we have today," Mr. LaBossiere says. He maintains that even with global expansion, Yardstick Software will remain an Alberta company.

"We're proud to be a successful technology company in Alberta and this is where we will stay."

"The most exciting thing about this company is that we have gone into areas we never expected to."

Gushor Inc.
Dr. Steve Larter, CEO

Outstanding Commercial Achievement in Alberta Science and Technology (<25M)…continued

TECHNOLOGY HELPS OIL COMPANIES MAKE EXPLORATION AND PRODUCTION DECISIONS

Gushor Inc. was established in 2006, but the Calgary Research Park-based provider of integrated reservoir fluid characterization, geochemistry, and reservoir engineering technologies has already helped oil sands and heavy oil operations in Canada and elsewhere. It has completed more than 170 projects for clients, including some of the world's largest energy companies.

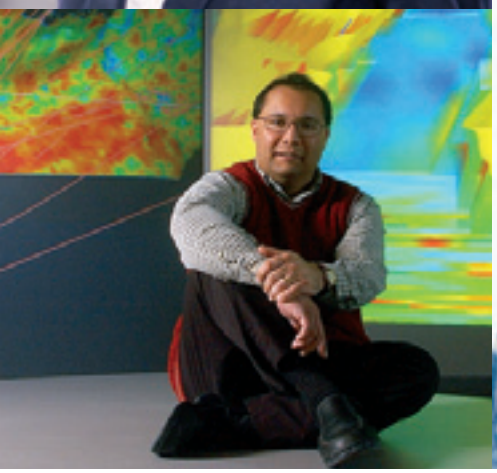
Gushor's team of 12 engineering, geoscience and IT PhDs, M.Sc.s and several business professionals has developed technologies addressing challenges presented by variable heavy oil quality and complex reservoirs.

"Gushor has revolutionized how viscosity is measured in the oil sands and heavy oil industries and how that information is used by reservoir engineers to design effective recovery processes," says CEO Dr. Steve Larter. He adds that oil sand bitumen viscosity can vary from the consistency of maple syrup to that of chocolate within 50 metres. "The mobility of the oil determines where wells will be placed, how they will be operated and how much oil can be extracted from the well," he explains. "We've allowed operators to refine what they do by developing technology that accurately measures viscosity at high resolution and by putting that information into sophisticated reservoir engineering models."

Gushor is an independent University of Calgary spin-off company, commercializing its own and the university's technologies. It has filed four patents and continues to make aggressive investment in research and development. In its first full year of operation, the company achieved revenue in the seven-figure range. In its second year, Gushor's revenue grew by a further 100 per cent.

"We hope to reach revenues of $25 million within four years," Dr. Larter says. Gushor conducts much of its business in Western Canada, but has successfully completed projects in the United States, China, Europe and South America. The company's growth will come partly from geographic expansion and by increasing its profile in heavy oil as well as oil sands.

"We want to take what we've successfully accomplished in Canada into the rest of the world," Dr. Larter says. The company is also using its expertise in oil chemical and physical property analysis to develop on-site applications of fluid characterization. "We can do more sophisticated chemical analyses of Jupiter's moons than we can oil composition at the well site," Dr. Larter says. "We see a huge opportunity for operators to make decisions at the well sites while they



top left:

Jennifer Adams

bottom left:

Ian Gates

right:

Steve Larter

are drilling, instead of waiting to have all of the samples brought back to the lab for analysis."

Dr. Larter says Gushor's biggest achievement is taking university-level research and development and building an engineering, geoscience, and business team into a technology company that is helping its clients make critical million dollar decisions.

"We enjoyed seeing our papers in the big academic journals," he says. "Even more satisfying is having designed recovery processes that reduce CO2 emissions at source by 50 per cent and can save our clients millions of dollars."

"We want to take what we've successfully accomplished in Canada into the rest of the world."

The Mustard Seed
Diana Schwenk, Director of Development

Societal Impact Award

AGENCY HELPS GUESTS DARE TO DREAM

"We firmly believe there is no better investment than in the people of Alberta," states Diana Schwenk, director of Development at the Mustard Seed Society. "We also believe people are our greatest resource and the more independent the people are the stronger the community is."

The not-for-profit organization has been housing, clothing and feeding Calgary's homeless for 24 years. It shelters about 275 people a night. And for the last six years, Mustard Seed has been breaking down the digital divide that separates the computer-literate from those who have fallen behind the blinding pace of technological change.

The Mustard Seed adopted its technological programs in 2003 when Industry Canada's Smart Communities project provided the opportunity to build a technical infrastructure within and between the social services agencies in Calgary.

"The technology interweaves through everything we do," Ms. Schwenk says, referring to the Mustard Seed's more than 40 programs that help guests find shelter, employment, and to develop skills. The agency now has a computer lab where staff and volunteers teach guests computer skills. It also allows them to track the progress of the guests for statistical purposes, strategic planning and case management, and to issue identification cards to guests to improve safety at the shelter.

"We try to work with people to develop themselves," explains Ms. Schwenk. "We measure the assets they have in their lives, like shelter, income, social supports, and recreational opportunities. We want to ensure the whole person is being fed, so that individual can contribute back to society." Ms. Schwenk says technology changed the focus of the work Mustard Seed were doing.

"We began working to get people off the street," she says. "Now we have about 30 people a month who move into independent living. That's incredible." Computers and technology were instrumental, in part because guests now have the opportunity to write exams and look for work online, write their resumes, and develop other employment skills.

Ms. Schwenk attributes the Mustard Seed's technology to the success of a client named Jim who has been staying at the Mustard Seed for a few years, initially to have his basic needs met. Through the help of the agency's computerized goal-

Diana Schwenk

tracking system, his support worker was able to help him set and achieve his goals. First he moved to transitional housing and participated in upgrading his education and seeking work. Then he found work in a Mustard Seed facility and this spring he moved to his own apartment.

"He credits his success to the staff and volunteers and the access to technology that allowed him to gain the skills he needed to apply for a job, and manage a budget and his personal life," says Ms. Schwenk.

"We help people believe in themselves. We let them dare to dream," she adds. "Each success our guests achieve encourages them to reach higher."

"We firmly believe there is no better investment than in the people of Alberta."

Dr. Chris Goodall
Co-Founder & VP
Applications, Trusted
Positioning Inc.

Leaders of Tomorrow

Sponsored by Alberta Advanced Education and Technology

LEADING THE WAY WITH GPS

Dr. Chris Goodall was introduced to GPS (Global Positioning System) when one evening he found himself lost in Grizzly country in the Yukon. At his father's suggestion he dug from his pocket what he considered to be a toy, the GPS his father had given him for Christmas. In spite of his skepticism, the device led him and his father to directly back to the trail.

"Since then I've been hooked on it," says the avid hiker and camper. But the engineer in him quickly recognized the limitations of the GPS. "It doesn't work under trees and it's not accurate indoors," he notes. Dr. Goodall was driven to find a better system. "It's in my DNA to explore," he explains.

"I'm trying to make positioning systems that work everywhere," he adds. And there's no better place to do that than Alberta, already a hub of geomatics research and innovation. Dr. Goodall is a postdoctoral fellow in the department of Geomatics at the University of Calgary and a co-founder of a high-tech startup based on his research called Trusted Positioning Inc. He has submitted three patents, of which he was inventor of two—one related to self-calibration of devices intended for high-volume consumer sales; the other related to multiple inertial sensor integration. The company's specialty is low-cost navigation and location technology for vehicles and portable consumer electronics, like cell phones. Dr. Goodall's commercialization strategy includes affordability and usability for mainstream adoption, while providing an "always there" accurate position wherever the mobile device may be used.

"One of my patents is about calibrating errors autonomously, as the personal device is used, to remove cost constraints of the technology and optimize accuracy and reliability" he explains. "The other is about integrating GPS with multiple acceleration and turning rate sensors to measure position, velocity, and attitude more reliably." Typically these systems are used to navigate ships, submarines and aircrafts; Dr. Goodall's invention is built for portable applications that are not tethered to a platform.

Beyond his capabilities as a businessman and a scientist, Dr. Goodall is a master communicator. As a postgraduate student at the University of Calgary, he was involved with several organizations helping to help raise awareness of geomatics among people outside the field.

Chris Goodall

"I found it very inspiring to talk at conferences and grad schools about the issues of technology and commercialization and having the opportunity to speak to potential students about opportunities in the field," he says.

"I like to talk about Alberta being a hub of knowledge in the area. We're not exporting highly qualified personnel because we're doing the work ourselves right here," says Dr. Goodall.

"A lot of important contributing people are here," he says. "I can be a piece of it and help keep it going. And I can reflect back on my teachers who have been so instrumental in my career development."

"I like to talk about Alberta being a hub of knowledge in the area. We're not exporting highly qualified personnel because we're doing the work ourselves right here."

Dr. Shaheed Merani
Joint MD/PhD student,
University of Alberta

Leaders of Tomorrow…continued

TEAMWORK KEY FOR RISING STAR

"A leader is someone who excels at what they do, is charismatic and approachable," says Dr. Shaheed Merani. "The leaders I try to emulate bring together excellent groups of colleagues to accomplish a larger task. It's not about a single person, it's about teamwork."

Dr. Merani is in his seventh year of the MD/PhD program at the University of Alberta and on track to becoming a leader in medical research. He chose to work with Dr. James Shapiro, an internationally recognized diabetes researcher. Dr. Merani's research, identifying new strategies to improve the function of donor tissue, holds promise of sustained insulin-free normoglycemia following islet transplantation.

In spite of his youth, Dr. Merani has a strong publication record, with 22 scientific peer-reviewed articles that underline the University of Alberta's global diabetes leadership position.

"I'm still a student and am learning the art and science of clinical medicine," says Dr. Merani, "but what most satisfies me is that I am developing a skill set and a network of empowering individuals around me who are allowing me to reach common societal goals. As a clinician, I hope to deliver excellent care to my patients and develop technologies to improve their lives."

Working with patients and their families is what nudged Dr. Merani into the field of medicine. "I see my career as a physician who delivers health care, as a scientist who finds new ways to treat disease and as an advocate who ensures access to excellent, efficient, and equitable health care," he explains. "I chose medicine because I can move from the lab to the clinic and see the benefit of my work in real time."

Dr. Merani is not putting his compassion and his advocacy on hold until graduation. He's put in countless volunteer hours to make science more accessible in the community. Among his favourite projects is tutoring high school students in math and science.

"I help them when they are struggling and I work with them to develop interest and confidence," Dr. Merani says. "It's satisfying to see students discover for themselves the rewards a joy of scientific discovery."

Within the medical community, Dr. Merani has taken a leadership role in health care policy and advocacy in Canada. He led the executive board as president of the

Shaheed Merani

Canadian Federation of Medical Students, which represents over 7,500 members. More recently he joined the boards of the Canadian Medical Association and the Association of Faculties of Medicine of Canada.

Dr. Merani's vision for the future and his entrepreneurial spirit emerged when he took the initiative, led a writing team of over 70, and found a publisher for Essentials for the Canadian Medical Licensing Exam: Review and Prep for MCCQE Part 1, a major medical text book designed for medical students studying for their licensing exam. The book hit the shelves earlier this year.

"It's satisfying to see students discover for themselves the rewards a joy of scientific discovery."

Shawna Pandya
Student, Faculty of Medicine and Dentistry, University of Alberta

MULTITASKER STRIVES FOR POSITIVE IMPACT

Shawna Pandya always tries to push herself beyond what she's already accomplished. And that has meant she is constantly raising an already high bar.

"The way I frame it there are two extremes in humanity: surviving and thriving," she explains. "And I want to have an impact on as many people as I can by enabling innovative new technologies." The self-described professional multitasker says her role models are also history's greatest multitaskers, like Leonardo DaVinci, who was successful in art, design, science, and engineering.

"I admire people who dare to defy boundaries," she says. "People who push their dreams against huge odds to get their concepts accepted have been a tremendous benefit to humanity." Ms. Pandya acknowledges that it's still early in her career and she wants to keep her interests as broad as possible, but medical innovation is the key area she's interested in.

Currently in the faculty of Medicine at the University of Alberta, Ms. Pandya has already completed an M.Sc. in Space Studies at the International Space University in France and a B.Sc. in Neuroscience at the University of Alberta. Through these fields, Ms. Pandya has established a niche in the field of space technology spin-offs for medical benefit. Her expertise is being tapped for book chapters, conferences, review articles, editorial panels for emerging peer-reviewed journals, and innovative projects.

This summer Ms. Pandya attended Singularity University at NASA-Ames on full scholarship. She was one of 23 international students in a program that brings together emerging experts and leaders to use their areas of expertise—from nanotechnology to medicine to policy and law—to harness accelerating technologies to have a positive impact on one billion people in the areas of water, healthcare, energy, and climate change.

Among her accomplishments to date is the 96-page quick-reference guide that addresses safety topics of concern related to the Autonomous Transfer Vehicle, a delivery vehicle to the International Space Station. Ms. Pandya is fascinated by how space technology has more earthbound applications. One of her favourite examples is telemedicine.

"On Earth, space agencies, the World Health Organization, and national governments are all working to reach more remote areas in the developed and underdeveloped world through telemedical networks," Ms. Pandya explains. "We

Shawna Pandya

want to make sure all of the world's citizens have portable health care." Based on her space technology research Ms. Pandya produced a business plan for a student-run consultancy to deliver telemedicine in remote areas.

"I want to push the limits of knowledge in medical research, neuroscience and regenerative medicine."

"I want to push the limits of knowledge in medical research, neuroscience and regenerative medicine."

Dr. Elizabeth Cannon
Professor, Geomatics Engineering

Dean, Schulich School of Engineering, University of Calgary

Outstanding Contribution to the Alberta Science and Technology Community

PUTTING CALGARY ON THE GPS MAP

A lifelong interest in science and math led Dr. Elizabeth Cannon to her career in geomatics engineering and to the forefront of international GPS (Global Positioning Systems) research and innovation. Her leadership at the Schulich School of Engineering at the University of Calgary and in the community has helped shape the vision of science and technology in Alberta.

Now dean of the Schulich School of Engineering and a recognized world innovator of satellite navigation for land, air and marine technology and applications, Dr. Cannon says she was equally drawn to Calgary and the then-new field of GPS technology. "It was exciting to be here at that time," she remembers. "The city was growing and GPS technology was at a point when it really was coming downstream."

Twenty-five years later, she reflects on some of her accomplishments.

"Calgary is now recognized as one of the world's nodes of excellence in GPS technology," she says. "I've been able to be part of building that strong geomatics community and I've seen it gain momentum." Dr. Cannon has been instrumental in putting Calgary on the GPS map. She worked with academia, industry and government to build a significant research program in satellite navigation systems, which has helped earn Calgary and Alberta a place as a leader in the development and commercialization of innovative technologies applied to navigation and positioning.

Awarded the Alberta Centennial Medal for her leadership in the science and technology community and listed among Canada's 100 Most Powerful Women in 2006, Dr. Cannon uses her influence to be a mentor and a role model for young scientists, particularly women.

"I'm very passionate about attracting young women into science and engineering," she says. "Youth—male and female—have all manner of choices in front of them. We need talented young people to pursue careers in science so they can take part in the global economy." Dr. Cannon has been the catalyst for many programs encouraging girls to become involved in engineering. And for five years, she held

Elizabeth Cannon

the NSERC/Petro-Canada Chair for Women in Science and Engineering for the Prairie Region promoting science and engineering to young women. Because of her continuous advocacy, the Schulich School of Engineering has a higher proportion of female undergraduate students than all other major engineering schools in Canada.

Dr. Cannon is involved in various industry boards and advisory committees where her inclusive approach involving all sectors and the community is key to strategic initiatives that enhance Alberta's science and technology sector.

"I connect with community and find the people who want to roll up their sleeves and be part of making an impact," Dr. Cannon says. "If people around the table have good ideas and can build a strong case for economic growth and social impact investments, great things will happen."

"I connect with community and find the people who want to roll up their sleeves and be part of making an impact,"

2009 ASTech Awards Distinguished Patrons

The Alberta Heritage Foundation for Medical Research (AHFMR) has a 30-year history of supporting excellence in health research in Alberta. Heritage researchers earn international recognition for advancing knowledge and innovation in a number of areas including genetics, heart disease, diabetes, bone and joint health, neurosciences, and health services research. AHFMR's investments are in people—from high school students to internationally acclaimed scientists—and in research activity spanning bench to bedside, in order to improve the health and lives of Albertans and people around the world.

Alberta Ingenuity supports science and engineering research excellence and is engaging Albertans in building a strong science culture in the province. Ingenuity aligns with provincial priorities to maximize the impact of research in Alberta by creating dynamic partnerships and helping recruit and support top talent. These connections help commercialize technologies that are helping solve Alberta problems, and can be shared around the world.

The Alberta Research Council (ARC) puts research to work. We're linking science and industry to create innovations that benefit the lives and businesses of everyday Albertans, strengthen the Canadian economy and drive global markets. ARC's researchers and scientists are recognized for their excellence in applied R&D both here at home and abroad. ARC is the largest and oldest applied R&D organization in Canada and the only one of its kind in Alberta.

Alberta Advanced Education and Technology is responsible for enhancing value added activity, increasing innovation and building a skilled workforce to improve the long-run sustainability of Alberta's economy. The ministry ensures the province's high quality learning environment, including an effective apprenticeship and industry training system, is affordable and accessible, and the source of a highly skilled workforce. During 2008-09 the Government established a new model for the provincially funded research and innovation system to better align resources, make the system more responsive to researchers and entrepreneurs, and be more competitive in the global economy. The ministry is focusing its research and innovation efforts in the areas of bioindustries (i.e. agriculture, forestry, life sciences), energy and the environment, health and bringing technology to market, while continuing to support enabling technologies such as information and communications technology and nanotechology.

AVAC Ltd. is an Alberta-based, private, not-for-profit company that invests in research initiatives and early stage commercial businesses that expand Alberta's value-added industry, with particular focus on the agri-business, renewable resource, ICT, life sciences and other industrial technology sectors. Created in 1997, AVAC aids its clients by providing early stage investment, insight, and focus to build viable commercial value-added opportunities in Alberta.

2009 ASTECH Awards Distinguished Patrons… continued

With Alberta's largest technology and intellectual property practice, Bennett Jones LLP is an internationally recognized Canadian business law firm focused and founded on principles of professional excellence, integrity, respect and independent thought. Our firm's leadership position is reflected in the law we practise, the groundbreaking work we do, the client relationships we have, and the quality of our people.

Bio Alberta is the central voice and the organizing hub for life sciences in Alberta. We are a private, not-for-profit industry association with activities focused on the following areas:

- Advocacy
- Industry promotion
- Increasing industry access to financing
- Facilitating access to human resources
- Business development and networking opportunities

Alberta's life science industry is a broad field of endeavours encompassing biotechnology, environmental science, medical technology, industrial bioproducts, agriculture biotechnology, bioinformatics, and natural health products.

CMG Reservoir Simulation Foundation (Foundation CMG) supports professors and students in leading edge research in computer simulation and modeling flow of liquids and gases and bio-chemical reactions in the earth. Improving technology and reducing negative impacts: CO2 sequestration, oil and gas production, in-situ recovery and other processes with advanced 4D dynamic visualization. Exciting opportunities for engineers and scientists exploring CO2, oil and gas recovery, coal bed methane, in-situ oilsands, environment remediation and other technologies. Foundation CMG is an industry endowed not-for-profit organization and sponsors researchers and students in universities in Alberta and around the world.

Dow AgroSciences Canada is a research-based, agricultural sciences company with a diverse product portfolio including weed, insect, and disease management for crops, range and pasture, forestry and industrial vegetation management. The company also has significant investments in plant genetics and biotechnology platforms in canola and corn which focus on a range of input production traits and value-added quality traits. Established field research capabilities across Western and Eastern Canada include a canola breeding station and global trait research facility in Saskatoon, Saskatchewan, and a corn breeding station at St. Mary's, Ontario. Significant research and commercial development alliances in Canada include the National Research Council's Plan Biotechnology Institute in Saskatoon, and Agriculture and Agri-Food Canada.

2009 ASTECH Awards Distinguished Patrons… continued

Hitachi Data Systems leverages global R&D resources to develop storage solutions built on industry-leading technology with the performance, availability and scalability to maximize customers' ROI and minimize their risk. By focusing on the customer's perspective as we apply the best hardware, software, and services from Hitachi and our partners, we uniquely satisfy our customers' business needs. With approximately 4,100 employees, Hitachi Data Systems conducts business through direct and indirect channels in the public, government and private sectors in over 170 countries and regions. Its customers include more than 50 percent of Fortune 100 companies.

iCORE invests in people – the highest calibre research scientists who work on fundamental and applied problems in informatics. It operates several grant programs to develop iCORE Chairs at Alberta universities, around which world-class research teams are developed. To date, over twenty-seven research chairs have been established to focus on emerging areas such as wireless communications, artificial intelligence, systems biology, and quantum and nanocomputing. Over a dozen research chairs are in partnership with Alberta industry. For more information, visit www.icore.ca.

KPMG is well qualified to serve the needs of technology companies. We have the necessary resources and in-depth experience to help producers of technology products and services succeed in today's dynamic business environment. As an industry thought leader, we provide long-range vision, astute insights, and innovative professional service strategies to help leading companies stay at the top of their markets. Our role is to help businesses sustain their success by minimizing risk and transforming opportunities into clear and powerful results. KPMG LLP is the Canadian member firm of KPMG International, the coordinating entity for a global network of professional services firms, providing audit, tax, and advisory services, with an industry focus. The aim of KPMG International members' firms is to turn knowledge into value for the benefit of their clients, people, and the capital markets. With nearly 94,000 people worldwide, member firms provide audit, tax, and advisory services from 717 cities in 148 countries.

In today's high-tech world, products and services change as rapidly as technology evolves. Keeping up with these changes can be overwhelming and time-consuming. As your insurance advisor, we ensure our market information is current and remains on top of technological trends which affect our clients' business. Whether you are an emerging company or a multinational firm with revenue in the billions, Lloyd Sadd Insurance makes it a priority to understand your business and the way it operates in context with technology. Lloyd Sadd Insurance's Technology Industry Practice is a group of insurance professionals working exclusively with technology clients to think up unique and dynamic solutions for their insurance needs so clients can stay focused on running their business.

2009 ASTECH Awards Distinguished Patrons… continued

Mount Royal is a premier undergraduate institution, proudly offering a unique blend of programs, including baccalaureate degrees, applied degrees, diplomas and certificates, to more than 12, 000 full- and part-time students and 40,000 continuing education students each year. Some 80% of our full-time students are enrolled in degree programs. For close to 100 years, Mount Royal has developed innovative, personalized and outcome-focused courses of study that prepare our graduates for the next stage in the their lives – be that moving on to graduate or professional studies, or developing successful careers. In fact, 90 per cent of our graduates find jobs in their fields within a year. Our programs are developed with expert input from advisory groups made up of faculty and industry leaders. In the area of science and technology, this has resulted in programs like the Bachelor of Applied Science — Environmental Science, which prepares students to make a real difference in developing sustainable and green futures for a variety of employers. Another example is our four-year Bachelor of Nursing program, Mount Royal's first independent baccalaureate degree, introduced in 2007. This program is a leader in innovative teaching strategies and outstanding practical instruction. Mount Royal graduates enter the market confident and ready to make an impact in the world. And, while Mount Royal has continually evolved to meet the changing needs of society, one thing remains the same: Mount Royal's graduates are in high demand because of the quality of education they receive here.

NAIT is one of the preeminent institutes of technology in Canada, providing real-world education in business, advanced technologies and skilled trades to more than 84,000 learners worldwide each year. Known for student success, NAIT also engages with business and industry in applied research and innovation and provides corporate training around the world. The institute offers 250 degree, applied degree, diploma and certificate programs, including 35 apprenticeship trades, as well as more than 1,400 continuing education courses, and is home to two unique baccalaureate programs: The Bachelor of Technology in Technology Management (BTech) – the only program of its kind in Alberta – and the Bachelor of Business Administration (BBA). NAIT is the largest apprenticeship trainer in Canada and trains approximately half of Alberta's apprentices.

NAIT has more than 148,000 alumni worldwide. Ninety-five per cent of grads are employed within six months of graduation, including 53 per cent who found jobs before completing their studies.

When it comes to innovative technology training, SAIT Polytechnic is in a class of its own, offering more than 100 programs to help people further their career passions. Programming spans eight broad disciplines: business, construction, energy, health and public safety, hospitality and tourism, information and communications technologies, manufacturing and automation, and transportation. SAIT offers applied degrees, diplomas, certificates and apprenticeships, along with continuing education and corporate training. SAIT works closely with business and industry to ensure its programs are relevant. More than 1,000 industry professionals serve on program advisory committees. Business and industry partnerships have also led to the establishment of seven

2009 ASTECH Awards Distinguished Patrons… continued

Centres of Technology, many of them unique in Canada. A SAIT education positions graduates for success. In annual surveys, graduates consistently report high employment rates; most recently an impressive 95 per cent for the Class of 2008. SAIT is a leader in applied research and innovation, facilitating projects to accelerate industry's innovation agenda while providing real-world learning experiences for students.

Shell has operated in Canada for 98 years and employs more than 6,100 people across Canada. For the eighth consecutive year, Shell was named one of Canada's top employers and has been a leader in sustainable development since 1991. A leading manufacturer, distributor and marketer of refined petroleum products, Shell's aim is to meet the energy needs of society, in ways that are economically, socially and environmentally viable, now and in the future. Shell is Canada's largest producer of sulphur and one of Canada's largest oil sands developers.

Syncrude
Securing Canada's Energy Future

For more than 30 years, Syncrude has been responsibly producing crude oil from the oil sands of Alberta. And for 45 years, research and development have played a large role in shaping the company's success; it now produces enough crude oil to meet 15% of Canada's needs, is a major contributor to Alberta's economy, and is poised for further growth that is executed in a sustainable way. Syncrude operates the oil sands industry's only dedicated research and development centre, and, in the last five years alone, has spent more than $200 million to find new or improved ways to operate and reduce its impact on the environment. As well, Syncrude collaborates with many universities and research institutes, and is a founding member of the Canadian Oil Sands Network for Research and Development.

TELUS®

TELUS Corporation is the largest telecommunications company in Western Canada and the second largest in the country. We provide a wide range of communications products and services including data, Internet Protocol (IP), voice, entertainment, and video. Our strategy is to unleash the power of the Internet to deliver the best solutions to Canadians at home, in the workplace and on the move.

UNIVERSITY OF ALBERTA

The University of Alberta is the largest research institution in the province serving nearly 37,000 students in more than 170 undergraduate programs and 120 graduate programs. As one of Canada's top universities for external funding, it received approximately $500 million in sponsored research in 2008-09. The University's international reputation continues to grow with its leading-edge achievements such as "Edmonton Protocol" treatment for Type 1 diabetes; the pioneering work of the National Institute for Nanotechnology; and the world's first antiviral treatment for hepatitis B. Since 1994, University researchers have reported more than 1,290 inventions, received 401 patents and generated more than $35 million in licensing and royalties revenue. The University (through TEC Edmonton) currently has 76 active start-up companies. Our students learn from some of the brightest scholars in the country and the best teachers; the University of Alberta leads the country in the number of 3M Teaching

2009 ASTECH Awards Distinguished Patrons… continued

Fellowships - Canada's top award for undergraduate university teaching excellence. In 2008, eleven University of Alberta professors were named as Fellows of the Royal Society of Canada, which is the highest national academic honour for scholars, artists and scientists.

The University of Calgary reflects the community that created and supports it – dynamic, innovative, and energetic. As one of Canada's leading research universities, these qualities are at the heart of all we do. The University of Calgary has significantly increased its research funding to $254 million, which ranks in the Top 10 in Canada, and is continuing to move ahead.

The University of Lethbridge provides a personal, supportive learning environment for approximately 7,800 students. The U of L offers relevant, progressive programs and more than 150 degree/program options through six Faculties and Schools – Arts & Science, Education, Fine Arts, Health Sciences, Management and Graduate Studies. Undergraduate and graduate students alike learn with inspired scholars who combine teaching, creativity and research. Over the last decade, the U of L has evolved from a small and very successful primarily undergraduate university to a research-intensive, comprehensive university with a focus on both undergraduate and graduate studies.

The U of L is home to the Alberta Institute for Epigenetics; the Prentice Institute for Global Population and Economy; and the inaugural Alberta Heritage Foundation for Medical Research (AHFMR) Polaris Award, which brought one of the world's foremost experts in neurophysiology and $20 million in research funding to the U of L's renowned Canadian Centre for Behavioural Neuroscience. In fall 2008, the U of L proudly opened the Alberta Water and Environmental Science Building – a state-of-the-art facility that houses some of the world's leading water and environmental science researchers.

Western Economic Diversification Canada / Diversification de l'économie de l'Ouest Canada

Canada

Western Economic Diversification Canada (WD) invested more than $63 million towards 48 innovation projects across the West in 2008-09. This leveraged an additional $214.7 million from a variety of partners, including provincial and municipal governments, universities, research institutes, industry and not-for-profit organizations.

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2009 ASTech After-Party Host

CYBERA
Alberta Cyberinfrastructure for Innovation

Cybera Inc. is an Alberta-based non-profit organization driving innovation and investment in cyberinfrastructure technologies for research and business applications. Cybera maintains primary offices and staff at the University of Calgary and the University of Alberta. Through collaborations with academic and private-sector partners, Cybera facilitates access to leading edge technologies and expertise to advance research and development in priority areas such as health, energy, the environment, and Information and Communication Technologies (ICT). For more information, please visit http://www.cybera.ca.

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Winnova Management

Dr. David Bailey
Genome Alberta

Mr. Paul D. Clark
VisionGain Consulting Inc.

Mr. Craig Dobson
Taylor Warwick Consulting Limited

Dr. Alice Hontela
University of Lethbridge

Dr. Cornelia Kreplin
Alberta Agriculture and Rural Development

Dr. R. Sean Sanders
University of Alberta

Dr. Oksana Suchowersky
University of Calgary

Mr. Rick Tofani
Alberta Research Council

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Dr. Roger Pederson
TR Labs

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Saskatoon, Saskatchewan

Todd Babiak
Edmonton, Alberta

Mr. Tim Lougheed
Ottawa, Ontario

2009 ASTech Awards Nominators

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Mike Belosevic
Walter Bischof
Craig Blackburn
Lisa Bowes
Gordon Broderick
Elizabeth Cannon
Daphne Cheel
Yunfei Chen
George Clayton
Marc Elrick
Dennis Fitzpatrick
Marvin Fritzler
Aki Georgacacos
Peter Hackett
Denise Hemmings
Oleh Hnatiuk
Steve Hogle
Mike Hoyles
Jack Jhamandas
Shannon Jones
John Kennelly
Prem Kharbanda
Don Kjosness
Jill Kowalchuk
Martin Kratz
Chris LaBossiere
Robert Lai
Eddie Liu
Lili Liu
Dave MacKillop
John Masters
Michael McDougall
Alexander McEwan
Patrick McGinn
Wade Muri
Christine Murray
John O'Donovan
Ken Porteous
Shelley Powell
Ryan Radke
Dennis Salahub
Barry Sanders
Julie Schimke
John Shaw
Ivan Sierralta
Rod Sikora
Cheyanne Steffen
Fred Stewart
Patrick Sullivan
Lynn Sutherland
Yun Tam
Gregory Taylor
Bradley Thomas
Robert Tipman
Kathryn Todd
Steve Vossos
Samuel Weiss
Frederick West
Carey Williamson
David Woynorowski

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ASTECH Award Recipients

Innovation in Alberta Science and Technology

1990 Ronald G. Micetich

Outstanding Leadership in Alberta Science

1991 Leroy Cogger
1992 Leonard T. Bruton
1993 Benno Nigg & D.L.J. Tyrrell
1994 Jeremy Wang Group
1995 Robert Hodges
1996 Robert V. Moody
1997 Timothy R. Mosmann
1998 Richard E. Peter
1999 David W. Schindler
2000 The Islet Transplantation
2001 John Wallace
2002 Samuel Weiss
2003 Brian D. Sykes
2004 Bryan Kolb
2005 Dr. Paul Kubes
2006 Philip Currie
2007 Dr. David Bundle
2008 Tristram Chivers

Outstanding Leadership in Alberta Technology

1991 John Tulip
1992 Lawrence C.H. Wang
1993 Brian Unger
1994 Donald B. Robinson
1995 Karl Chuang
1996 Norman J. Dovichi
1997 Maurice M. Moloney (co-recipient)
1997 Anthony A. Noujaim (co-recipient)
1998 Leo A. Behie
1999 Wayne Grover
2000 Larry Comeau
2001 Terry Allen
2002 D. Jed Harrison
2003 Michael Brett
2004 Gérard Lachapelle
2005 Dr. Norman Beaulieu
2006 Alberta Ingenuity Centre for Machine Learning (AICML)
2007 Dr. Garnette Sutherland
2008 Jacob H. Masliyah

Outstanding Achievement in Applied Technology and Innovation

2002 Saskatchewan Research Council (SRC), Pipe Flow Technology Centre
2003 Miodrag Belosevic
2004 Light Up the World Foundation
2005 IMUS Research Team
2007 Conematic Heating Systems Inc.
2008 DIRTT Environmental Solutions

Outstanding Commercial Achievement in Alberta Science and Technology

1990 B & W Technologies Ltd.
1991 Intera Technologies Inc.

Outstanding Commercial Achievement in Alberta Science and Technology

Corporations with sales > $25M

1992 Sherritt Gordon Ltd., Metal and Coinage Products Marketing
1993 CS Resources Limited
1994 IDACOM Telecom Division, of Hewlett-Packard Canada Ltd.
1995 NOWSCO Well Services
1996 Tesco Corporation
1997 PanCanadian Petroleum Ltd.
1998 Syncrude Canada Ltd.
1999 QC Data International Ltd.
2000 Not awarded
2001 CSI Wireless Inc.
2002 SMART Technologies Inc.
2003 NOVA Chemicals Corporation
2004 NOVA Chemicals Corporation
2005 NovAtel Inc.
2007 Intuit Canada Ltd.
2008 Hemisphere GPS Inc.

Corporations with sales < $25M

1992 Biomira Inc. and Westronics Inc.
1993 Valmet Automation (Canada) Ltd.
1994 Alta Genetics Inc.
1995 Merak Projects Ltd.
1996 Revolve Technologies Inc.
1997 SMART Technologies Inc.
1998 Wi-LAN Inc.
1999 EyeWire, Inc.
2000 Matrikon
2001 BioWare Corp.
2002 Micralyne Inc.
2003 Upside Software Inc.
2004 Ceapro Inc.
2005 CV Technologies Inc.
2006 Replicon Inc.
2007 Extreme Engineering

Outstanding Contribution to the Alberta Science and Technology Community

1990 Eric A. Geddes
1991 Clement W. Bowman
1992 Robert B. Church
1993 Harry E. Gunning
1994 D. Robert Weir
1995 John S. Colter
1996 Thomas P. Keenan (co-recipient)
1996 Martha Piper (co-recipient)
1997 William D. Croft
1998 James W. Murray
1999 Eric P. Newell
2000 David Mitchell
2001 William Cochrane
2002 Andrew W. Gilliland
2003 Matt Spence
2004 David T. Lynch
2005 Dr. William Bridger
2006 Cyril M. Kay
2007 Dr. Eldon Smith
2008 Howard E. Tennant

Leaders of Tomorrow

2000 Rita Aggarwala
2001 Jocelyn Grozic
2002 Michael S. Kallos (co-recipient)
2002 Talib Rajwani (co-recipient)
2003 Tim Poon
2004 Konrad Walus
2005 Ryan Schneider
2006 Sean Hum
2007 Jeeshan Chowdhury
2008 Travis Murdoch

ASTECH Foundation Special Award

(A special award issued at the discretion of the Board of Directors of the Foundation)

1992 Richard E. Taylor
1993 Raymond U. Lemieux
1994 Lionel E. McLeod
1995 TRLabs
1996 Alberta Research Council
1998 Honorable Peter Lougheed, Q.C.
1999 Fred A. Stewart
2001 Robert J. Crawford
2003 Alastair Ross, in memoriam
2005 Dr. Roger Butler, in memoriam (co-recipient)
2005 Dr. Karl A. Clark, in memoriam (co-recipient)

1990–2008

2006 Alvin Gerald Libin
2007 Dr. Margaret-Ann Armour
2008 Institute for Reconstructive Sciences in Medicine (iRSM)

Innovation in Industrial Research

2005 Xsensor Technology Corporation
2006 Quadrise Canada Fuel Systems

North

1991 Axion Spatial Imaging
1992 ZI Probes Inc.
1993 Russell Technologies Inc.
1994 Harding Instrument Co. Ltd.
1995 Epsilon Chemicals
1996 Madenta Communications Inc.
1997 AltaRex Corp.
1998 Cytovax Biotechnologies Inc.
1999 BioTools Incorporated
2000 SRW Technologies
2001 Russell N.D.E. Systems Inc.
2002 BigBangwidth Inc.
2003 Acrodex Inc.
2004 Virexx Medical Corp.

South

1991 Itres Research
1992 Smart Technologies Inc.
1993 Malibu Engineering Ltd.
1994 New Era Systems Service Ltd.
1995 Yellowbird Products Limited
1996 Travis Chemicals Inc.
1997 Intelligent Databases International Inc.
1998 Canzyme Corporation
1999 Oncolytics Biotech Inc.
2000 Mentor Engineering
2001 Alterna Technologies Group Inc.
2002 SemBioSys Genetics Inc.
2003 Spartek Systems Inc.
2004 Canadian Bio-Systems Inc.

Innovation in Oil Sands Research

1992 Roger Butler
1993 Jacob Masliyah
1994 Clifton Shook
1995 Norbert Morgenstern
1996 Otto P. Strausz
1997 Murray R. Gray
1998 Don Scott
1999 Waldemar Maciejewski
2000 Jan Czarnecki
2001 Donald E. Sheeran
2002 Keng H. Chung
2003 Paraffinic Froth Treatment Technology Commercialization Team
2004 Hassan Hamza
2005 Rodney Ridley and Patrick Dougan
2006 The In Situ Combustion Research Team
2007 AACI Research Team, ARC
2008 Dr. Hong Zhang

Innovation in Agricultural Sciences

1999 Gary R. Stringam
2000 Prem Kharbanda
2001 James H. Helm
2002 Allen Good
2003 John O'Donovan
2004 Cold Regions Geoenvironmental Research Facility
2005 Dr. Thava Vasanthan and Dr. Feral Temelli
2006 George Clayton
2007 Dr. Maurice Moloney
2008 Dr. Ronald Howard

Al-Pac/ASTech Innovation in Integrated Landscape Management

2001 Stan Boutin
2002 Brad Stelfox
2003 EMEND Project Partners

Excellence in Science and Technology Journalism:

General Public

1992 Mark Lowey
1993 Michelle Jones
1994 Arthur Heller
1996 Scott McKeen
1998 John Acorn
2000 Not awarded
2002 Alberta Venture Magazine, Editorial Team
2004 Ed Struzik
2006 Gregory Harris

Specialized Publications

1993 Rae Haaland
1994 Lois Hammond
1995 Dennis Urquhart
1997 Not awarded
1999 Connie Bryson
2001 Tony Kryzanowksi
2005 Nickle's New Technology Magazine, Editorial Team

Excellence in Science and Technology Public Awareness

1994 Science Alberta Foundation
1995 Praxis Society
1996 Calgary Science Network (co-recipient)

1996 WISEST (co-recipient)
1997 Discover 'E' Science Camps
1998 Alberta Women's Science Network
1999 Dinosaur Country Science Camp
2000 Edmonton Space & Science Centre (now Odyssium)
2001 Operation Minerva
2002 'Pi in the Sky'
2003 University of Alberta's Faculty of Graduate Studies and Research (FGSR) Outreach Program
2004 Biotechnology Training Centre Outreach
2005 Shad Valley
2006 Kananaskis Field Stations and G-8 Legacy Chair in Wildlife Ecolory
2007 The Alta Project, Dr. James Pinfold, UofA
2008 The Rothney Astrophysical Observatory

Outstanding Achievement in Environmental Technology and Innovation

2008 Patrick Hettiaratchi

Innovation in Information and Communications Technology

2008 H. James Hoover and Antony G. Olekshy, University of Alberta and Avra Software Lab

Be immortalized

THE 20TH ANNUAL ASTECH AWARDS GALA

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[in chronological order of their having joined the Foundation]

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